

REMARKS

In the Office Action, Claims 1, 3, 9 and 11 have been rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 5,631,100 (“*Yoshino*”); and Claims 1, 3, 9 and 11 have been rejected under 35 U.S.C. §102 as anticipated by U.S. Patent No. 6,455,202 (“*Marugan*”). In response, independent Claims 1 and 9 have been amended to include, in part, wherein the cathode active material includes a lithium iron phosphorous oxide that has an olivine structure. Support for the amended claims can be found in Applicants’ specification, for example, on page 5 at lines 11-20. Therefore, Applicants believe that the anticipation rejections should withdrawn in view of same.

Claims 1 to 9 and 10 have been rejected under 35 U.S.C. §103 as allegedly unpatentable over U.S. Patent No. 6,632,566 (“*Yamada*”) in view *Marugan* and/or in view *Yoshino*. Claims 2 and 10 have been canceled without prejudice or disclaimer as previously provided, and thus, this rejected with respect to same has been rendered moot.

With respect to the remaining pending claims, Applicants believe that this rejection should be withdrawn. As previously discussed, independent Claims 1 and 9 include, in part, that the cathode active material includes a lithium iron phosphorous oxide that has an olivine structure. Neither *Marugan* or *Yoshino* provide such material as the cathode active material. In *Marugan*, the examples relate to other types of active materials, such as those including nickel, cobalt, magnesium, aluminum, manganese, and combinations thereof. See, *Marugan*, table 1 and table 2. In *Yoshino*, the lithium-containing composite metal oxide relates to a compound having a lamellar structure, such as those types of materials containing cobalt, aluminum, indium, tin, manganese, and combinations thereof. Therefore, nowhere do either the *Marugan* and *Yoshino* references provide motivation to combine a binder that includes a rubber latex adhesive and a thickener as the Patent Office seems to have alleged.

Even if combinable, the cited references at best provide an active cathode material without iron in addition to a binder and thickener as allegedly provided in *Marugan* and *Yoshino*. Indeed, the primary *Yamada* reference fails to provide a binder that includes a rubber latex adhesive and a thickener as even admitted by the Patent Office. In contrast, Applicants have conducted a number of experiments detailed in the specification that are directed to a lithium iron phosphorous oxide as a cathode active material. See, Applicant’s specification, pages 13-

19. The results of such experiments demonstrate that by using a synthetic rubber latex adhesive, such as styrene butadiene rubber latex, and a thickener, such as ammonium salt polyacrylic acid, as a binder of the cathode in a secondary battery with its charge final voltage of about 4.0 V or less, the cycle characteristics and the high low discharge capacity can be improved. In this regard, it was found that the charge and discharge capacity, the capacity maintenance ratio, and the discharge cycle life of the secondary battery were improved, particularly the load characteristics. Therefore, Applicants believe that the cited references even if combinable are distinguished from the claimed invention.

Accordingly, Applicants respectfully request that the obviousness rejection be withdrawn.

For the foregoing reasons, Applicants respectfully submit that the present application is in condition for allowance and earnestly solicit reconsideration of same.

The Commissioner is hereby authorized to charge deposit account 02-1818 for any fees which are due and owing.

Respectfully submitted,

BELL, BOYD & LLOYD LLC

BY


Thomas C. Basso
Reg. No. 46,541
Customer No. 29175

Dated: November 21, 2006